

Name: _____

Test Date: _____

LAND AND WATER STUDY GUIDE

1. Identify TWO characteristics of the **soil horizons**:
 - a. **O horizon**
 - b. **A horizon**
 - c. **B horizon**
 - d. **C horizon**
2. Identify TWO physical and TWO chemical **soil tests**:
3. Identify TWO issues that are contributing to the **hunger problem**:
4. Describe the main characteristics of the first **Green Revolution**
5. Describe the characteristics of the **Gene Revolution (second Green Revolution)**
6. Identify TWO economic and TWO environmental advantages and disadvantages of using **GM foods**:
 - a. Economic
 - b. Environmental

7. Identify the FOUR new crop developments and a characteristic of each that makes them beneficial:

8. Define **pesticide**:

Identify the defining characteristics of the TWO types of pesticides:

9. Describe the role of **Rachel Carson** in understanding the role of persistent pesticides:

10. Describe the difference between **bioaccumulation** and **biomagnification**:

11. Identify TWO advantages and TWO disadvantages of **chemical pesticide use**:

12. Identify and describe:

a. **FIFRA**

b. **FFDCA**

c. **FQPA**

13. Define **evolution**:

14. Identify TWO current examples of evolution:

15. Explain the purpose of using **Integrated Pest Management (IPM)**:

16. Identify the steps in the **IPM cycle**:

17. Describe the purpose of using **biological controls**:

18. Identify THREE types of **biological controls** and the pests that are controlled:

19. Identify the % of the major causes of **soil degradation**: _____% Overgrazing & _____% Deforestation

20. Describe the process of **salinization** and identify a method to remediate or prevent salinization:

21. Describe the process of **desertification**:

22. Identify how the following practices that can be used for **maintaining soil on a cropland**:

- a. **Windbreaks (Shelterbelts)**
- b. **Conservation tillage**
- c. **Crop rotation**
- d. **Agroforestry OR Terracing**

23. Describe **intensive agriculture**:

Identify TWO advantages and TWO disadvantages of intensive agriculture:

- a. Advantages:
- b. Disadvantages:

24. Describe environmental impact of **crop harvest** on soil and land:

25. Describe the use of **fertilizers**:

Identify the TWO **macronutrients** that are often limiting factors: _____ & _____

26. Identify the characteristic process of the THREE commonly used **types of irrigation**:

- a.
- b.
- c.

27. Identify the purpose of **seed banks**:

28. Describe the characteristics of **factory farming**:

29. Discuss why it is more efficient to produce grain for human consumption than to produce meat for human consumption. In your answer, consider both land use and energy use.

30. Identify TWO environmental problems and TWO human health problems from meat production:

31. Describe **sustainable agriculture**:

Identify TWO more components & TWO less that are provided by sustainable agriculture:

32. Identify TWO advantages and TWO disadvantages of **organic farming**:

a. Advantages:

b. Disadvantages:

33. Describe the **tragedy of the commons** as it applies to soil and land use:

34. Describe the process of **hydroponics** and the identify ONE benefit of using hydroponics:

35. Identify the characteristic of each forest:

a. **Old Growth**

b. **Secondary Growth**

c. **Tree Plantation**

36. Identify TWO ecological services and TWO economic services provided by trees:

37. Describe the importance of leaf litter and identify TWO problems of leaf litter loss:

38. Identify the TWO methods of **logging**:

a. **Clear cutting**

b. **Strip cutting**

c. **Selective cutting**

39. Describe TWO **ecosystem services** provided for humans by forests. Explain how clear-cutting would affect each ecosystem, service you describe.

40. Identify the problem associated with **edge effects** resulting from harvesting trees:

41. Identify TWO possible solutions that might lead to **sustainable forestry**:

42. Identify ONE advantage and ONE disadvantage of **forest fires** in managing ecosystems:
43. Explain why the **management of grasslands** is economically and environmentally important.
44. Identify the SEVEN possibilities to building a sustainable city:
45. Describe the purpose of the **National Environmental Policy Act**:
46. Identify TWO characteristics of **brownfields**:
47. Describe ONE environmental benefit and ONE societal benefit of **brownfield reclamation**.
48. Explain what happened at **Love Canal**:
49. Describe the **Resource Conservation and Recovery Act (RCRA)**:
50. Describe the **Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)**

51. Discuss TWO **biological methods** for hazardous waste remediation:

a.

b.

52. Discuss TWO **resources** that are mined for their commercial value:

53. Identify TWO advantages and TWO disadvantages of **globalization**:

54. Describe **overfishing & sustainable yield**:

55. Identify TWO different **commercial fishing practices** and the effect of each on organisms:

56. Describe the **tragedy of the commons** as it applies to fishing:

57. Describe process of **aquaculture (fish farming)**:

58. Identify TWO advantages and TWO disadvantages of fish farming:

Advantages:

Disadvantages: